

## Recovery Plan Action Status

**Plan Name: Recovery Plan for the Golden Paintbrush (*Castilleja levisecta*)**

**Plan Status: Final**

**Plan Date: 23-Aug-00**

**Lead Agency: USFWS**

**Lead Office: Washington Fish And Wildlife Office**

**(360)**

**753-9440 )**

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Golden Paintbrush ( <i>Castilleja levisecta</i> )	1	111.	Management Plan, Rocky Prairie NAP	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources	Management: General	Species Expert	Interim management plan completed; periodic review and revision will be necessary
Golden Paintbrush ( <i>Castilleja levisecta</i> )	1	112.	Management plan, Forbes Point, Whidbey Island naval Air Station	Ongoing Current	FY 2000 - FY 2004		United States Navy	Management: General	Species Expert	Interim management plan completed; section 7 consultations between Navy and USFWS completed.
Golden Paintbrush ( <i>Castilleja levisecta</i> )	1	113.	Management plan, Fort Casey State Park	Complete	FY 2000 - FY 2004	FY 2007	Washington State Parks	Management: Planning	Species Expert	The Washington State Parks in collaboration with the Whidbey-Camano Land Trust completed a management plan in 2007.
Golden Paintbrush ( <i>Castilleja levisecta</i> )	1	12.	Promote protection of occurrences on private lands by pursuing the highest level of protection agreeable to the individual landowners	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, U.S. Fish and Wildlife Service	Acquisition	Internal Technical Assistance	Options to be considered should include acquisition by a public agency or conservation organization, conservation easement, management agreement and registry.

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Golden Paintbrush (Castilleja levisecta)	2	131.	Conduct studies to clarify the mechanisms by which fire affects Castilleja levisecta	Ongoing Current	FY 2000 - FY 2004	FY 2015	Washington Department of Natural Resources, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, University of Washington School of Forestry, Institute for Applied Ecology	Management: Habitat Maintenance and Manipulation, Research: Management Techniques	Graduate Student, Species Expert, Volunteer	Evidence suggests that prescribed fire can be used to enhance populations. However, additional information is needed on the optimal time of year, severity and return interval. Costs for this task are mostly in design and implementation of the treatments. Cost for the final five years will be covered under research efforts.
Golden Paintbrush (Castilleja levisecta)	2	132.	Conduct study to quantify and characterize encroachment by Douglas-fir, snowberry, Scots broom, bracken fern, roses, and blackberries	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, Warren Road Associates Limited Partnership, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Management: Habitat Maintenance and Manipulation, Research: Competition, Research: Management Techniques	Species Expert, Volunteer	Some sites have undergone dramatic change in species composition in the last 10-15 years. The effects of this change on C. levisecta need to be better understood. Regular, site management implemented at protected, publicly owned locations: at Private locations some sites are regularly managed and others one location is treated intermittently.

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Golden Paintbrush (Castilleja levisecta)	2	133.	Conduct studies to identify effective means (in addition to prescribed fire) of controlling competing vegetation	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, Research Institutions, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, United States Navy , University of Washington School of Forestry	Research: Management Techniques	Graduate Student, Species Expert, Volunteer	To successfully manage grassland habitat: we have developed and regularly implement efficient and effective methods to control competing vegetation without negatively affecting C. levisecta. These methods include mowing, prescribed fire, and judicious herbicide treatments during the dormant season.
Golden Paintbrush (Castilleja levisecta)	2	134.	Monitor weedy species such as Hieracium pilosella and Cirsium arvense	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, United States Navy , Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Management: Habitat Maintenance and Manipulation, Research: Management Techniques	Volunteer	Noxious weed control is required by state law within some sites. Management prescriptions that use herbicides to eliminate noxious weeds may pose a threat to C. levisecta. We have successfully conserved C. levisecta by using set buffers around C. levisecta plants while treating weeds during the growing season.
Golden Paintbrush (Castilleja levisecta)	2	135.	Conduct studies on herbivory by deer, rabbits, etc.	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, Washington Natural Heritage Program, Research Institutions, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, United States Navy	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Species Expert, Volunteer	Several occurrences of C. levisecta have herbivory annually. We have used fences or small enclosure cages to protect plants and exclude herbivores during the plants annual life cycle, thus promoting the development of seed that we later collect for reintroduction purposes.

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Golden Paintbrush (Castilleja levisecta)	2	141.	Determine and characterize the genetic variation within and between known occurrences of the species	Complete	FY 2000 - FY 2004	FY 2005	British Columbia Conservation Data Centre, Washington Department of Natural Resources, Washington Natural Heritage Program, Research Institutions, U.S. Fish and Wildlife Service, University of Washington School of Forestry, Institute for Applied Ecology	Research: Genetics	Volunteer	Information is critical to planning reintroduction
Golden Paintbrush (Castilleja levisecta)	2	142.	Investigate longevity of seed viability	Complete	FY 2000 - FY 2004	FY 2006	Oregon Natural Heritage Program, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, The Nature Conservancy, University of Washington School of Forestry, Institute for Applied Ecology	Research: Propagation	Graduate Student, Species Expert	Important for assessing population trends and potentially for developing site management plans
Golden Paintbrush (Castilleja levisecta)	2	143.	Conduct research to better understand population dynamics of C. levisecta	Partially Complete	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, University of Washington School of Forestry, Institute for Applied Ecology	Management: Habitat Maintenance and Manipulation, Management: Population Monitoring, Management: Reintroduction, Research: Population Surveys	Species Expert	Critical for developing site management plans. Research has been conducted throughout the range of C. levisecta with several papers published on the subject.

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Golden Paintbrush (Castilleja levisecta)	1	15.	Develop and implement monitoring plans for all known sites	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington State Parks, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, The Nature Conservancy, Warren Road Associates Limited Partnership, Whidbey Camano Land Trust	Management: General	Species Expert	The individual land-managing agency should have the responsibility for monitoring their property. A plan is needed to ensure effective monitoring on private lands. One such plan was developed for the Neukom property, one of three adjacent private land parcels on San Juan Island.
Golden Paintbrush (Castilleja levisecta)	3	21.	Continue efforts to relocate historically known occurrences, particularly in the Willamette Valley, Oregon.	Partially Complete	FY 2000 - FY 2004	FY 2015	British Columbia Conservation Data Centre, Washington Department of Natural Resources, Oregon Natural Heritage Program, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, Whidbey Camano Land Trust, Institute for Applied Ecology	Research: Population Surveys	Species Expert, Volunteer	Small undetected populations may yet exist. We have conducted extensive survey efforts in the Willamette Valley and elsewhere, with no new populations identified.
Golden Paintbrush (Castilleja levisecta)	3	22.	Conduct de novo inventories in suitable habitat throughout the historic and extant range	Partially Complete	FY 2000 - FY 2004	Prior to FY 1995	British Columbia Conservation Data Centre, Oregon Natural Heritage Program, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, Whidbey Camano Land Trust, Institute for Applied Ecology	Research: Demographic Studies, Research: Population Surveys	Species Expert	Small, undetected populations may yet exist. If they do, they could play a key role in recovery efforts.
Golden Paintbrush (Castilleja levisecta)	3	23.	Create a spatial database for inventory efforts, including negative searches	Partially Complete	FY 2000 - FY 2004		British Columbia Conservation Data Centre, Oregon Natural Heritage Program, Washington State Parks, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, Institute for Applied Ecology	Management: Population Monitoring, Research: Population Assessment	Species Expert	Important for tracking status of each population

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Golden Paintbrush (Castilleja levisecta)	1	311.	Identify and clarify site characteristics that are essential to sustain C. levisecta	Complete	FY 2000 - FY 2004	FY 2010	Washington Department of Natural Resources, Washington State Parks, Research Institutions, U.S. Fish and Wildlife Service, The Nature Conservancy, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Research: Habitat Requirements	Species Expert	This task is partially addressed by task 143
Golden Paintbrush (Castilleja levisecta)	2	312.	Determine how to quickly establish viable plants and ultimately populations of the species.	Complete	FY 2000 - FY 2004	FY 2006	Washington Department of Natural Resources, Washington State Parks, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, University of Washington School of Forestry, Institute for Applied Ecology	Research: Management Techniques	Species Expert, Volunteer	Funding is included under seed viability studies, task 142.
Golden Paintbrush (Castilleja levisecta)	2	313.	Conduct research to ascertain whether, or under what circumstances, C. levisecta requires a host plant to survive and/or reproduce	Complete	FY 2000 - FY 2004	FY 2009	Washington Department of Natural Resources, Washington State Parks, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Research: Habitat Requirements, Research: Management Techniques	Species Expert, Volunteer	identifying requirements relating to host plants will be critical to successful establishment of new populations

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Golden Paintbrush (Castilleja levisecta)	1	32.	Develop a plan for reintroducing C. levisecta into unoccupied areas of its historic and extant range.	Complete	FY 2000 - FY 2004	FY 2005	Washington Department of Natural Resources, Oregon Natural Heritage Program, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Research: Reintroduction	Species Expert, Volunteer	Recovery of C. levisecta will be highly dependent upon on successful reintroductions (assisted migration).
Golden Paintbrush (Castilleja levisecta)	1	33.	Implement reintroduction plan	Ongoing Current	FY 2005	FY 2016	British Columbia Conservation Data Centre, Washington Department of Natural Resources, Washington State Parks, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, Warren Road Associates Limited Partnership, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Management: Reintroduction, Research: Reintroduction	Species Expert, Volunteer	Recovery will be highly dependent on successfully implementing reintroduction of the species throughout its historic range.

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Golden Paintbrush (Castilleja levisecta)	3	41.	Develop and conduct training programs (e.g. to be given to concerned agency personnel, as well as private landowners, etc)	Ongoing Current	FY 2000 - FY 2004		British Columbia Conservation Data Centre, Washington Department of Natural Resources, Oregon Natural Heritage Program, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, Warren Road Associates Limited Partnership, Institute for Applied Ecology	Management: General, Management: Habitat Maintenance and Manipulation, Management: Population Monitoring	Species Expert, Volunteer	Important for disseminating information to resource professionals and landowners on the Best Management Practices for successfully managing the species
Golden Paintbrush (Castilleja levisecta)	3	42	Develop a brochure or fact sheet for public dissemination	Complete	FY 2000 - FY 2004	FY 2007	British Columbia Conservation Data Centre, Washington Department of Natural Resources, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, Institute for Applied Ecology	Other: Information and Education	Species Expert	Broaden awareness of the public regarding the species.
Golden Paintbrush (Castilleja levisecta)	3	43.	Develop and disseminate species information to private landowners	Complete	FY 2000 - FY 2004	FY 2007	British Columbia Conservation Data Centre, Oregon Natural Heritage Program, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, The Nature Conservancy, Warren Road Associates Limited Partnership, Whidbey Camano Land Trust, Institute for Applied Ecology	Other: Information and Education	Species Expert, Volunteer	Broaden awareness of the public regarding the species



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Golden Paintbrush (Castilleja levisecta)	3	51.	Promote development and implementation of new laws and ordinances for the protection of C. levisecta	Partially Complete	FY 2000 - FY 2004		British Columbia Conservation Data Centre, Washington Department of Natural Resources, Oregon Natural Heritage Program, Washington Natural Heritage Program, U.S. Fish and Wildlife Service	Other: Regulations	Species Expert	Investigate opportunities for improving legal protection for the species
Golden Paintbrush (Castilleja levisecta)	3	52.	Promote compliance with all state laws and county ordinances and regulations protecting C. levisecta	Partially Complete	FY 2000 - FY 2004		British Columbia Conservation Data Centre, Washington Department of Natural Resources, Oregon Natural Heritage Program, Washington State Parks, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, The Nature Conservancy, Institute for Applied Ecology	Management: Planning, Other: Information and Education, Other: Regulations	Internal Technical Assistance	Coordinate conservation efforts within existing legal framework
Golden Paintbrush (Castilleja levisecta)	3	6.	Establish a technical working group to annually review the status of the species and assess the effectiveness of the management plans and other recovery tasks. Use adaptive management principles, if needed.	Ongoing Current	FY 2000 - FY 2004		Washington Department of Natural Resources, Washington Natural Heritage Program, U.S. Fish and Wildlife Service, The Nature Conservancy, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Management: Planning	Species Expert	To annually review ongoing recovery actions and to implement adaptive management as new information become available.

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Golden Paintbrush (Castilleja levisecta)	3	7.	Collect seed adequately representing the genetic diversity within the species and store in a Center for Plant Conservation approved facility	Ongoing Current	FY 2000 - FY 2004	FY 2015	British Columbia Conservation Data Centre, Washington Department of Natural Resources, Berry Botanic Garden, Washington State Parks, Washington Natural Heritage Program, UW Center for Urban Horticulture, U.S. Fish and Wildlife Service, Warren Road Associates Limited Partnership, Whidbey Camano Land Trust, University of Washington School of Forestry, Institute for Applied Ecology	Management: Propagation	Species Expert, Volunteer	Assist with reintroduction as insurance against future extinction